

INTERNATIONAL SEARCH REPORT

International Application No
PCT/GB 98/03298

A. CLASSIFICATION OF SUBJECT MATTER
IPC 6 H02K41/02 H02K33/16

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 6 H02K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|----------|--|--------------------------|
| X | GB 1 396 692 A (UNIVERSITY COLLEGE OF NORTH WALES) 4 June 1975 see page 1, line 37 - page 3, line 70 see page 3, line 95-113; figures 1-3 --- | 1,2,5 |
| X | US 4 712 027 A (KARIDIS) 8 December 1987 see abstract see column 4, line 42 - column 5, line 22 see column 5, line 52 - column 6, line 33 see column 8, line 7-16 see column 9, line 3-68; figures 1-7 --- | 1,2,10, 11 |
| X | EP 0 267 845 A (ETAT FRANCAIS) 18 May 1988 see the whole document --- | 1-3,5,6, 10-12 -/- |

Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

° Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

Date of mailing of the international search report

15 February 1999

19/02/1999

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Beitner, M

INTERNATIONAL SEARCH REPORT

International Application No
PCT/GB 98/03298

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

| Category | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|----------|--|-----------------------|
| A | US 5 418 413 A (SATOMI) 23 May 1995 see abstract see column 3, line 6 - column 5, line 12; figures 1-7 ----- | 1,2,4,5, 10,11 |
| A | US 4 965 864 A (ROTH ET AL.) 23 October 1990 see abstract see column 3, line 19 - column 5, line 8; figures 1-5 ----- | 16 |

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/GB 98/03298

| Patent document cited in search report | Publication date | Patent family member(s) | | Publication date |
|--|------------------|-------------------------|--|------------------|
| GB 1396692 | A 04-06-1975 | NONE | | |
| US 4712027 | A 08-12-1987 | DE 3778743 A | | 11-06-1992 |
| | | EP 0237848 A | | 23-09-1987 |
| | | JP 62233060 A | | 13-10-1987 |
| EP 267845 | A 18-05-1988 | FR 2606225 A | | 06-05-1988 |
| US 5418413 | A 23-05-1995 | JP 6189520 A | | 08-07-1994 |
| US 4965864 | A 23-10-1990 | NONE | | |

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

| | | |
|--|---|--|
| Applicant's or agent's file reference SP/1999 WO | FOR FURTHER ACTION see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below. | |
| International application No. PCT/GB 98/ 03298 | International filing date (day/month/year) 03/11/1998 | (Earliest) Priority Date (day/month/year) 03/11/1997 |
| Applicant ISIS INNOVATION LIMITED et al. | | |

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 3 sheets.

It is also accompanied by a copy of each prior art document cited in this report.

1. Certain claims were found unsearchable (see Box I).
2. Unity of invention is lacking (see Box II).
3. The international application contains disclosure of a **nucleotide and/or amino acid sequence listing** and the international search was carried out on the basis of the sequence listing
 - filed with the international application.
 - furnished by the applicant separately from the international application,
 - but not accompanied by a statement to the effect that it did not include matter going beyond the disclosure in the international application as filed.
 - Transcribed by this Authority
4. With regard to the title, the text is approved as submitted by the applicant
 the text has been established by this Authority to read as follows:
5. With regard to the abstract,
 - the text is approved as submitted by the applicant
 - the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this International Search Report, submit comments to this Authority.
6. The figure of the **drawings** to be published with the abstract is:

Figure No. 6b

 - as suggested by the applicant.
 - because the applicant failed to suggest a figure.
 - because this figure better characterizes the invention.

None of the figures.

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 Further documents are listed in the continuation of box C. Patent family members are listed in annex.

° Special categories of cited documents :

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 "O" document referring to an oral disclosure, use, exhibition or other means
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"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
 "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
 "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
 "&" document member of the same patent family

Date of the actual completion of the international search

15 February 1999

Date of mailing of the international search report

19/02/1999

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
 NL - 2280 HV Rijswijk
 Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
 Fax: (+31-70) 340-3016

Authorized officer

Beitner, M

INTERNATIONAL SEARCH REPORT

International Application No

GB 98/03298

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

| Category | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
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| A | US 5 418 413 A (SATOMI) 23 May 1995 see abstract see column 3, line 6 - column 5, line 12; figures 1-7 ----- | 1, 2, 4, 5, 10, 11 |
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INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

GB 98/03298

| Patent document cited in search report | Publication date | Patent family member(s) | | | Publication date |
|--|------------------|-------------------------|------------|--------------|------------------|
| GB 1396692 | A 04-06-1975 | NONE | | | |
| US 4712027 | A 08-12-1987 | DE 3778743 A | 11-06-1992 | EP 0237848 A | 23-09-1987 |
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| EP 267845 | A 18-05-1988 | FR 2606225 A | 06-05-1988 | | |
| US 5418413 | A 23-05-1995 | JP 6189520 A | 08-07-1994 | | |
| US 4965864 | A 23-10-1990 | NONE | | | |

PATENT COOPERATION TREATY

PCT

REC'D 26 NOV 1999

INTERNATIONAL PRELIMINARY EXAMINATION REPORT PCT

(PCT Article 36 and Rule 70)

| | | |
|--|---|---|
| Applicant's or agent's file reference SP/1999 WO | FOR FURTHER ACTION | See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416) |
| International application No. PCT/GB 98/03298 | International filing date (day/month/year) 03/11/1998 | Priority date (day/month/year) 03/11/1997 |
| International Patent Classification (IPC) or national classification and IPC H02K41/02 | | |
| Applicant ISIS INNOVATION LIMITED et al. | | |

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

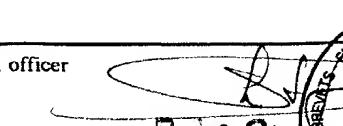
2. This REPORT consists of a total of 5 sheets, including this cover sheet.

This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consists of a total of 1 sheets.

3. This report contains indications relating to the following items:

- I Basis of the report
- II Priority
- III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV Lack of unity of invention
- V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI Certain documents cited
- VII Certain defects in the international application
- VIII Certain observations on the international application

| | |
|---|---|
| Date of submission of the demand 17/05/1999 | Date of completion of this report 24.11.99 |
| Name and mailing address of the IPEA/ European Patent Office D-80298 Munich Tel. (+49-89) 2399-0, Tx: 523656 epmu d Fax: (+49-89) 2399-4465 | Authorized officer  P. Le Guay Tel.: (+49.89) 2399-2677 |

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

I. Basis of the report

1. This report has been drawn up on the basis of (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments.*)

the international application as originally filed

the description, pages 1 - 16 , as originally filed
pages , filed with the demand
pages , filed with the letter of

the claims, Nos. 6 (part) - 16 , as originally filed
Nos. , as amended under Article 19
Nos. , filed with the demand
Nos. 1 - 6 (part) , filed with the letter of 26.10.99

the drawings, sheets / fig. 1/15 - 15/15 , as originally filed
sheets / fig. , filed with the demand
sheets / fig. , filed with the letter of

2. The amendments have resulted in the cancellation of:

the description, pages:
 the claims, Nos.
 the drawings, sheets / fig.

3. This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2 (c)).

4. Additional observations, if necessary:

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

| | | | |
|--------------------------|--------|-------------------------|-----|
| Novelty | Claims | 1 - 16 | YES |
| | Claims | None | NO |
| Inventive Step | Claims | 7 - 9, 13 | YES |
| | Claims | 1 - 6, 10 - 12, 14 - 16 | NO |
| Industrial Applicability | Claims | 1 - 16 | YES |
| | Claims | None | NO |

2. Citations and Explanations

1. The document JP-A-61295847 was not cited in the international search report. A copy of the document is appended hereto.

2. Concerning Claims 1, 2 and 5:

Document GB-A-1396962 discloses an electromechanical transducer comprising a stator (stator 1) having a plurality of core elements and a plurality of coils (coils 5) and a magnetic assembly (armature 3) having a plurality of poles (ribs 9), said stator and magnetic assembly being arranged for relative linear movement (see page 1, lines 9 - 10) and the magnetic poles are arranged to describe a helical path (see page 2, lines 6 - 10) about the axis of the transducer.

Document GB '962 does not disclose coils arranged to describe a helical path. This feature is however widely known in the art as for instance in JP-A-61295847.

Therefore this additional feature appears to be easily available for the skilled person without the requirement of any inventive activity and claims 1, 2 and 5 lack an inventive step (Article 33(3) PCT).

3. Concerning Claims 3 and 10 - 12:

The additional technical features disclosed in these claims are also disclosed in EP-A-0267845. The latter discloses an electromechanical transducer comprising

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

a stator (stator 101) and a magnetic assembly (écran 103) being arranged for relative linear movement, the stator being arranged in helix (column 3, line 25) and a magnetic circuit member (rotor 102) being provided inside the magnetic assembly.

Moreover the stator is comprised of high permeability which consists of a stack of laminations (see column 3, line 15), said laminations describing a helical path (see column 3, lines 35 - 39).

Therefore, Claims 3, 10, 11 and 12 also lack an inventive step (Article 33(3) PCT).

4. Concerning Claims 4, 6, 14, 15 and 16:

The additional subject-matter disclosed in these claims appears to be easily available to a man skilled in the art without the requirement of any inventive activity.

It is therefore assumed that these claims lack an inventive step (Article 33(3) PCT).

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

VII. Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

1. To meet the requirements of Rule 6.3(b) PCT, the independent claim 1 should be properly cast in the two-part form, with those features which in combination are part of the prior art being placed in the preamble.
2. Contrary to the requirements of Rule 5.1(a)(ii) PCT, the relevant background art disclosed in the documents GB-A-1396692, US-A-4712027 and EP-A-0267845 are not mentioned in the description, nor are these documents identified therein.
3. The features of the claims are not provided with reference signs placed in parentheses (Rule 6.2(b) PCT).

PATENT COOPERATION TREATY

PCT

NOTIFICATION OF THE RECORDING
OF A CHANGE(PCT Rule 92bis.1 and
Administrative Instructions, Section 422)

| |
|--|
| Date of mailing (day/month/year) 17 April 2000 (17.04.00) |
| Applicant's or agent's file reference SP/1999 WO |
| International application No. PCT/GB98/03298 |

From the INTERNATIONAL BUREAU

To:

PERKINS, Sarah
Stevens, Hewlett & Perkins
Halton House
20/23 Holborn
London EC1N 2JD
ROYAUME-UNI

IMPORTANT NOTIFICATION

| |
|---|
| International filing date (day/month/year) 03 November 1998 (03.11.98) |
|---|

1. The following indications appeared on record concerning:

the applicant the inventor the agent the common representative

| | | |
|---|--------------------------------|--------------------|
| Name and Address PERKINS, Sarah Stevens, Hewlett & Perkins 1 Serjeants' Inn Fleet Street London EC4Y 1LL United Kingdom | State of Nationality | State of Residence |
| | Telephone No. 0171 936 2499 | |
| | Facsimile No. 0171 936 2498 | |
| | Teleprinter No. | |

2. The International Bureau hereby notifies the applicant that the following change has been recorded concerning:

the person the name the address the nationality the residence

| | | |
|--|----------------------------------|--------------------|
| Name and Address PERKINS, Sarah Stevens, Hewlett & Perkins Halton House 20/23 Holborn London EC1N 2JD United Kingdom | State of Nationality | State of Residence |
| | Telephone No. 44 20 7404 1955 | |
| | Facsimile No. 44 20 7404 1844 | |
| | Teleprinter No. | |

3. Further observations, if necessary:

| | |
|--|---|
| 4. A copy of this notification has been sent to: | |
| <input checked="" type="checkbox"/> the receiving Office <input type="checkbox"/> the International Searching Authority <input type="checkbox"/> the International Preliminary Examining Authority | <input type="checkbox"/> the designated Offices concerned <input checked="" type="checkbox"/> the elected Offices concerned <input type="checkbox"/> other: |

| | |
|--|--|
| <p>The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland</p> <p>Facsimile No.: (41-22) 740.14.35</p> | <p>Authorized officer Catherine Massetti</p> <p>Telephone No.: (41-22) 338.83.38</p> |
|--|--|

PATENT COOPERATION TREATY

From the INTERNATIONAL BUREAU

PCT

NOTIFICATION OF ELECTION

(PCT Rule 61.2)

To:

United States Patent and Trademark
Office
(Box PCT)
Crystal Plaza 2
Washington, DC 20231
ÉTATS-UNIS D'AMÉRIQUE

in its capacity as elected Office

| | |
|---|---|
| Date of mailing (day/month/year) 10 June 1999 (10.06.99) | Applicant's or agent's file reference SP/1999 WO |
| International application No. PCT/GB98/03298 | Priority date (day/month/year) 03 November 1997 (03.11.97) |
| International filing date (day/month/year) 03 November 1998 (03.11.98) | |
| Applicant DADD, Michael | |

1. The designated Office is hereby notified of its election made:

in the demand filed with the International Preliminary Examining Authority on:

17 May 1999 (17.05.99)

in a notice effecting later election filed with the International Bureau on:

2. The election was

was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

| | |
|---|--|
| The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No.: (41-22) 740.14.35 | Authorized officer Lazar Joseph Panakal Telephone No.: (41-22) 338.83.38 |
|---|--|